UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/051,687	10/10/2000	Pierre A. Humblet	CX097033P01	8289

22917 7590 12/22/2005

MOTOROLA, INC.
1303 EAST ALGONQUIN ROAD
IL01/3RD
SCHAUMBURG, IL 60196

EXAMINER	
MEEK, JACOB M	

ART UNIT	PAPER NUMBER
2637	

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/051,687	HUMBLET, PIERRE A.	
	Examiner	Art Unit	
	Jacob Meek	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 10, 12 - 14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 10, 12 - 14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 October 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because of lack of clarity due to transmission / reproduction. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Response to Arguments

2. Applicant's arguments with respect to claims 1 – 12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, and 2 are rejected under 35 U.S.C. 102(e) as being anticipated by Davis et al (US-5,483,530).

With regard to claim 1, Davis discloses a device for communication between a digital adapter linked to an exchange by means of a digital interface, particularly of an ISDN type and an analog adapter linked to an exchange by means of an analog interface (see abstract, and column 5, lines 9 - 14), exchanges being linked by means of a telecommunications network (see figure 1, 103, and column 6, lines 44 – 53), wherein device includes means for direct linking between digital adapter and analog adapter the digital information being sent to the analog adapter, and vice versa, in digital form without emulating an analog signal (see abstract and column 5, lines 15 – 21).

With regard to claim 2, Davis discloses a device wherein direct link means include, in the direction of transmission from digital adapter to analog adapter, a digital transmitter situated in the digital adapter and able to transmit, to an analog receiver situated in analog adapter, analog pulses the voltage levels of which represent the information transmitted from digital adapter to analog adapter (see column 5, lines 2 – 8).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 3, 7, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Herzberg et al (US-5,710,790).

With regard to claim 3, Davis is silent with respect to construction of analog adapter other than to disclose that his digital adapter is interoperable with an analog adapter (see abstract). Herzberg discloses a device wherein direct link means include, in the direction of transmission from analog adapter to digital adapter, a analog transmitter situated in the analog adapter (see figure 9, 5) and able to transmit, to an digital receiver situated in digital adapter, an analog signal such that, when it is sampled by the analog interface of the exchange, it will equate the sum of a value able to be determined by the digital information item transmitted by the analog adapter to the digital adapter and of the echo of the signal transmitted by the digital adapter (see abstract) without value having to be equal to quantization law (see column 6, lines 1 - 19). It would have been obvious to one of ordinary skill in the art at the time of invention that reciprocal digital functionality would be required in digital adapter to render an operational end-to-end system.

With regard to claim 7, Davis is silent with respect to selection of quantitization levels for transmission. Herzberg discloses a device that provides level selection functionality (see column 5, lines 5 - 38) that encompasses range claimed by applicant. It would have been

obvious to one of ordinary skill in the art at the time of invention that reciprocal digital functionality would be required in digital adapter to render an operational end-to-end system.

With regard to claim 10, Davis is silent with respect to the construction of his digital modem. Herzberg discloses decoder (see figure 9, 20, 60) connected at its input to an echo filter (see figure 9, 13 and column 6, lines 1- 61) decoder delivering at its output to user's equipment most likely sequence of groups of bits transmitted by analog adapter (see column 6, lines 1- 61) given echo of signal produced by digital adapter. It would have been obvious to one of ordinary skill in the art at the time of invention that reciprocal digital functionality would be required in digital adapter to render an operational end-to-end system.

With regard to claim 12, the steps claimed as method are a restatement of the functionality of claim 3, and therefore would have been obvious to one of ordinary skill in the art at the time of invention given the aforementioned rejection of claim 3.

5. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Herzberg in further view of Caloyannides (US-4,032,762).

With regard to claims 8 and 9, Davis is silent with respect to construction of analog adapter other than to disclose that his digital adapter is interoperable with an analog adapter (see abstract). Herzberg discloses an analog adapter with a predistortion equalizer (see figure 9, 53 and column 5, lines 1 – 4). Herzberg is silent with respect to type of equalization performed. Caloyannides discloses an adaptive equalizer for receiving a class IV partial response signal (see column 3, lines 1 – 13). It would have been obvious to one of ordinary skill in the art at the time of invention that Caloyannides adaptive equalizer would have been useful in a system as it is defined as being operable as a digital device (see figure 10, 70) and that elimination of analog elements in Caloyannides device (see figure 10, 30', 36', and 32') by interfacing directly to a digital signal would result in a cost savings.

6. Claims 4 - 6, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Davis in view of Caloyannides.

With regard to claim 4, Davis is silent with respect to adaptive equalization of analog signal. Caloyannides discloses an adaptive equalizer for receiving an analog class IV partial response signal (see column 3, lines 1 – 13). It would have been obvious to one of ordinary skill in the art at the time of invention that Caloyannides adaptive equalizer would have been useful in a system as it would result in improved system operation in the presence of noise (column 7, lines 44 - 52).

With regard to claim 5, Davis is silent with respect to partial response being determined adaptively. Caloyannides discloses an adaptive equalizer for receiving that utilizes partial response decisions to adjust equalization (see column 4, lines 13 – 45). It would have been obvious to one of ordinary skill in the art at the time of invention that Caloyannides adaptive equalizer would have been useful in a system as it would result in improved system operation in the presence of noise (column 7, lines 44 - 52).

With regard to claim 6, Davis is silent with respect to output equalizer being a DFE or a Viterbi equalizer. Caloyannides discloses an adaptive equalizer for receiving a signal from a decision device for the adjustment of equalization (see figure 10, reference 37' and column 4, lines 34 – 45 where this is interpreted as representing DFE operation). It would have been obvious to one of ordinary skill in the art at the time of invention that Caloyannides adaptive equalizer would have been useful in a system as it would result in improved system operation in the presence of noise (column 7, lines 44 - 52).

With regard to claim 13, Davis discloses a device for communication between a digital adapter linked to an exchange by means of a digital interface (see figure 1, 102, 107 and column 6, lines 21 - 31) and an analog adapter linked to an exchange (see figure 1, 104 and

column 6, lines 44 - 47) by means of an analog interface, exchanges being linked by means of a telecommunications network (see figure 1, 103 and column 4, lines 47 – 53), wherein said device includes at least a means for receiving digital information from digital adapter being sent to analog adapter at a rate of at least 8000 digital information bearing symbols per second (see column 10, lines 15 – 25). Davis is silent with respect to equalization of analog adapter. Caloyannides discloses an adaptive equalizer for receiving an analog class IV partial response signal (see column 3, lines 1 – 13). It would have been obvious to one of ordinary skill in the art at the time of invention that Caloyannides adaptive equalizer would have been useful in a system as it is defined as being operable as a digital device and that a digital implementation is desirable (see figure 10, 70 and column 6, lines 19 - 34) and elimination of analog elements by interfacing directly to a digital signal would result in a cost savings therefore providing a motivation for the elimination of analog elements.

With regard to claim 14, Davis discloses that information bearing symbol is a group of bits originating from a digital data source and each information bearing signal is a group of bits originating from a digital data source and each information bearing symbol is as voltage level determined by choosing one voltage level from among a plurality of voltage levels that corresponds to a group of bits (see column 9, line 62 – column 10, line 14) where this is interpreted as equivalent functionality in context of application), a sequence of the voltage levels each voltage level represented in digital from by one byte and being transmitted 8000 times per second (see column 10, lines 15 – 19).

Other Cited Prior Art

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Steinka et al (US-5,134,611) discloses a method and apparatus for the connection of terminal devices to one another from an ISDN network to an analog network via telecommunications network and appears closely related to applicant's invention.

Cherubini (US-5,319,674) discloses a method for self training partial response equalization.

Harada et al (US-5,572,524) discloses a method and apparatus for the connection of terminal devices to one another from an ISDN network to an analog network via telecommunications network and appears closely related to applicant's invention.

Blackwell (US-5,671,251) discloses a method and apparatus for the connection of terminal devices to one another from an ISDN network to an analog network via telecommunications network, appears closely related to applicant's invention and is commonly assigned.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Meek whose telephone number is (571)272-3013. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571)272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMM
12/11/05